

PATENT
P56904**REMARKS**

The final Office action mailed on 12 December 2005 (Paper No. 20051206) has been carefully considered.

Claims 16 and 17 are being amended. Thus, claims 1 thru 20 are pending in the application.

It should be noted that dependent claim 16 (which is dependent from claim 1) is being amended merely to recite the function of the barrier as "preventing ink for the organic polymer layer from running out of the channel". That recitation is merely a repetition of the recitation of the function of the barrier, as set forth in independent claim 1 (at lines 7-8 thereof). Therefore, the amendment of dependent claim 16 does not raise "new issues" requiring further consideration and/or search by the Examiner, and thus this Amendment After Final should be entered on that basis.

With respect to the amendment of independent claim 17, it should be noted that the amendment is strictly formal in nature. Specifically, the semi-colon appearing at line 10 of claim 17 is being replaced by a comma, and the last two paragraphs (after the word "wherein") in the previous version of independent claim 17 are being merged into a single paragraph. This is consistent with the original intent of the amendment of claim 17, which was to recite the barrier as comprising both at least one first barrier and at least one second

PATENT
P56904

barrier with the functions recited in claim 17. Thus, the amendment of dependent claim 16 does not raise "new issues" requiring further consideration and/or search by the Examiner, and thus this Amendment After Final should be entered on this basis as well.

In the third paragraph on page 2 of the final Office action, the Examiner rejected claims 1 thru 5, 9 thru 11 and 13 thru 16 under 35 U.S.C. §102(e) for alleged anticipation by Humbs *et al.*, U.S. Patent No. 6,774,392. In the second paragraph on page 5 of the final Office action, the Examiner rejected claims 6 thru 8, 12 and 17 thru 20 under 35 U.S.C. §103(a) for alleged unpatentability over Humbs *et al.* '392 in view of Tatsufumi, Japanese Patent Publication No. 2001-230073.

It is respectfully submitted that Humbs *et al.* '392 is not valid prior art under 35 U.S.C. §102(e) as alleged by the Examiner in paragraph 6 of the Office action. Specifically, 35 U.S.C. §103(c) provides the following:

"Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person."

In the latter regard, it should be noted that both the Humbs *et al.* '392 patent and the present application are assigned to the "same person" in the context of 35 U.S.C. §103(c),

PATENT
P56904

that is, to Samsung SDI Co., Ltd. Therefore, as indicated in 35 U.S.C. §103(c), the rejection under 35 U.S.C. §102(e) cannot preclude patentability of the invention of the present application.

In response to the latter argument, as contained in the previously filed Amendment, on page 8 of the final Office action, the Examiner states agreement with the proposition that Humbs *et al.* '392 is not valid prior art under the provisions of 35 U.S.C. §103(c). However, the Examiner then states that Humbs *et al.* '392 is being rejected under 35 U.S.C. §102(e) and 35 U.S.C. §103(a), and not under 35 U.S.C. §103(c). Applicants respectfully disagree with the Examiner's interpretation of 35 U.S.C. §103(c).

Specifically, 35 U.S.C. §103(c) deals with the subject matter "developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title" (quoting from the statute). In this case, Humbs *et al.* '392 is being applied against claims 1 thru 5, 9 thru 11, and 13 thru 16 under 35 U.S.C. §102(e). That is to say, the Examiner has determined that Humbs *et al.* '392 is "a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent" (quoting from 35 U.S.C. §102(e)). Thus, Humbs *et al.* '392 does qualify as prior art under 35 U.S.C. §102(e), as required by the first portion of 35 U.S.C. §103(c) quoted above.

PATENT
P56904

Having established that Humbs *et al.* '392 falls within the scope of subject matter addressed by 35 U.S.C. §103(c), the latter statute further states that such a reference "shall not preclude patentability under this section when the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person" (quoting from the second portion of 35 U.S.C. §103(c)).

As stated above, it is clear that both Humbs *et al.* '392 and the present application are assigned to the "same person" within the context of 35 U.S.C. §103(c), that is, to Samsung SDI Co., Ltd. Therefore, as indicated in 35 U.S.C. §103(c), the rejection under 35 U.S.C. §102(e) cannot preclude patentability of the invention of the present application.

In response, on page 8 of the final Office action, the Examiner apparently construes 35 U.S.C. §103(c) to preclude rejections brought under 35 U.S.C. §103(c) itself. Applicants respectfully disagree with this interpretation of the statute. Specifically, since 35 U.S.C. §103(c) does not contain grounds for denying patentability, it is clear that the statute was and is intended to "preclude patentability ... when the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person" (again, quoting from 35 U.S.C. §103(c)). The words "under this section" are, it is submitted, intended to convey to the reader that, under 35 U.S.C. §103(c), prior art, as defined in subsections (e), (f) and (g) of section 102, which

PATENT
P56904

would otherwise be applied against the claims in order to preclude patentability, shall not be used to preclude patentability where the subject matter of the patent and the claimed invention were, at the time the invention was made, owned by the same person.

Thus, Humbs *et al.* '392 is clearly not valid prior art relative to the rejections set forth in the final Office action.

Specifically, since 35 U.S.C. §103(c) specifically addresses subject matter which qualifies as prior art under 35 U.S.C. §102(e), and since the Examiner has rejected claims 1 thru 5, 9 thru 11 and 13 thru 16 under 35 U.S.C. §102(e), those rejections are clearly not valid under the provisions of 35 U.S.C. §103(c). With respect to the rejection of claims 6 thru 8, 12 and 17 thru 20 under 35 U.S.C. §103(a), that rejection is also clearly invalid, especially since, even under the Examiner's apparent interpretation of the statute, 35 U.S.C. §103(c) "shall not preclude patentability under this section" (emphasis supplied -- quoting from 35 U.S.C. §103(c)). That is to say, the statute clearly states that a rejection "under this section", that is, under any of the sub-sections of section 103, including 35 U.S.C. §103(a), is not a valid rejection.

To summarize, under the provisions of 35 U.S.C. §103(c), the rejection of claims 1 thru 5, 9 thru 11 and 13 thru 16 under 35 U.S.C. §102(e) is clearly invalid, and the same is true of the rejection of claims 6 thru 8, 12 and 17 thru 20 under 35 U.S.C. §103(a). On this

PATENT
P56904

basis alone, allowance of this application should now be forthcoming.

Independent claim 1 recites a patentable invention since, as stated above, the rejection under 35 U.S.C. §102(e) is not valid because Humbs *et al.* '392 is not valid prior art in accordance with the provision of 35 U.S.C. §103(c). Therefore, allowance of independent claim 1 and its dependent claims is requested.

Dependent claim 16 recites a further feature of the invention of claim 1. That is, claim 16 recites that the insulator layer has two laterally displaced sides, and further recites the barrier as being formed on the insulator layer and as extending outwardly from at least one of the two sides of the insulator layer for preventing ink for the organic polymer layer from running out of the channel.

In the final Office action (paragraph bridging pages 2 and 3), the Examiner indicated that, in Humbs *et al.* '392, an insulator layer 3 is formed on the substrate 1 in Figure 3A of the patent, thereby forming a channel in a predetermined pattern 40. Actually, in Figure 3A of Humbs *et al.* '392, the second insulator layers 4 are formed on the first insulator 3 so as to form channels 40 located between each pair of the second insulator layers 4.

The Examiner then stated, on page 3 of the final Office action, that Humbs *et al.* '392 provides a "barrier (8) formed at either side of the insulator layer (4) for preventing ink for

PATENT
P56904

the organic polymer layer from running out from both ends of the channel” (quoting from page 3, lines 2-3 of the final Office action). However, the barriers 8 of Figure 3A of Humbs *et al.* ‘392 do not meet the requirements of dependent claim 16.

Specifically, Humbs *et al.* ‘392 does not disclose or suggest a barrier formed on the insulator layer and extending outwardly from at least one of the two sides of the insulator layer, as recited in dependent claim 16. In fact, referring to Figure 3A of Humbs *et al.* ‘392, the barriers 8 are merely placed in the center of each channel 40 at each end 41 and 42 of the channel 40. As also shown in Figure 3A, none of the barriers 8 extends to each side so as to contact the pair of second insulator layers 4 located at each side of the barriers 8. Thus, it is impossible for the barriers 8 of Figure 3A of Humbs *et al.* ‘392 to carry out the function of the barrier recited in independent claim 1 and dependent claim 16 of the present application, that is, the function of preventing ink for the organic polymer layer from running out of the channel. As is clear from Figure 3A, there are gaps on both sides of the barriers 8 so that ink can freely run out of the channels 41 through the gap provided between the barriers 8 and the respective second insulator layers 4 located on the sides of the barriers 8.

In the latter regard, Humbs *et al.* ‘392 states (at column 3, lines 11-14) that the barrier 8 is provided for the purpose of “blocking flow of the organic polymer layer at the ends of the pattern defined by the insulator layer” (quoting from column 3, lines 11-12), and thus there is no disclosure or suggestion in Humbs *et al.* ‘392 of the provision of a barrier for

PATENT
P56904

preventing ink from running out of the channel.

For the reasons stated above, Humbs *et al.* '392 is not a valid prior art reference under 35 U.S.C. §102(e) due to the restriction imposed on prior art under 35 U.S.C. §103(c). However, even if Humbs *et al.* '392 were valid prior art, as indicated above, the invention recited in dependent claim 16 is distinguishable from the cited prior art so as to preclude rejection under 35 U.S.C. §102 or §103.

Independent claim 17 recites an organic light emitting diode (OLED), comprising a substrate, an insulator layer, an organic polymer layer, a barrier, and a second electrode layer with the functions recited in the claims, and also recites that the barrier comprises at least one first barrier and at least one second barrier with the functions recited therein, those functions corresponding to the functions recited in dependent claim 6 of the present application.

On page 5 of the final Office action, the Examiner rejected independent claim 17 under 35 U.S.C. §103 based on the combined disclosures of Humbs *et al.* '392 and Tatsufumi '073. On page 7 of the final Office action, the Examiner admitted that Humbs *et al.* '392 was silent regarding recitation of a second barrier for preventing polymer ink from running in from neighboring channels, but cited Tatsufumi '073 as disclosing "a second barrier (15; abstract paragraphs 9-11) in order to increase the reliability of the display" (quoting from

PATENT
P56904

page 7, lines 8-9 of the final Office action). However, Applicant disagrees with the rejection under 35 U.S.C. §103 for the following reasons.

First, as mentioned above, Humbs *et al.* '392 is not valid prior art under 35 U.S.C. §102(e) due to the restriction imposed on prior art by 35 U.S.C. §103(c). Second, Humbs *et al.* '392 does not at all mention or suggest a solution to the problem of ink flowing out of the channel, the barriers of Humbs *et al.* '392 merely being provided for the purpose of blocking flow of polymer from the channel. In fact, by providing gaps between the barrier 8 and the respective insulators provided at the sides of each barrier, Humbs *et al.* '392 actually teaches away from any solution to the problem of ink flow out of the channel. Thus, it is doubtful that one of ordinary skill in the art, upon reviewing Humbs *et al.* '392, would be motivated to seek a solution to the problem of ink flow out of the channel.

Furthermore, Tatsufumi '073 does not disclose or suggest at least one first barrier for preventing polymer ink from running out of the channel, and does not disclose or suggest at least one second barrier for preventing polymer ink from running in from the neighboring channels, as recited in independent claim 17. In that regard, it should be noted that Tatsufumi '073 has no relationship or relevance to polymer ink flow. Rather, Tatsufumi '073 relates to an evaporation method for light emitting material, which is not at all related to the inkjet printing method of the present invention. Thus, Tatsufumi '073 would not be concerned with the problem of overflow of polymer ink.

PATENT
P56904

In addition, the Abstract appearing on the first page of Tatsufumi '073 states that the disclosed arrangement includes "plural barrier ribs of electric insulation protruding to the substrate which expose at least a part of the first display electrodes" (quoting from the Abstract (57), lines 7-9).

In addition, a translation of the Abstract (related to Figure 3) is as follows:

"An organic electro-luminescence display panel having an image display arrangement area which is constructed with a plural number of luminous parts, comprising:

a substrate on which a plural number of first display electrodes which corresponds, on the surface, to the luminous part are formed;

a plural number of electrical insulating barriers (7), being protruded on the substrate, for exposing at least part of the first display electrode;

a thin film of at least one layer of the organic electro-luminescence medium, which is formed on each of the exposed first display electrode;

a plural number of second display electrode which is formed on the thin film of the organic electro-luminescence medium, which is located between the barriers (7);

a plural number of electrically conductive wires extending from between the barriers formed on the second display electrode toward the outside of the image display arrangement area;

wherein each of the barriers extends to the outside of the image display arrangement area, and includes a barrier end (15) which perpendicularly crosses the barrier in the extending direction of the barrier, and which has a larger width than the that of the barrier" (quoting from section (57) on the first page of Tatsufumi '073).

Furthermore, a translation of paragraph [0013] of Tatsufumi '073 is as follows:

"Barrier end 15 of barrier 7 is formed outside the image display

PATENT
P56904

arrangement area so as to prevent short circuit among the second display electrodes" (quoting from paragraph [0013] of Tatsufumi '073).

Thus, as indicated by the English language Abstract appearing on the first page of Tatsufumi '073, as well as the Abstract (related to Figure 3) and paragraph [0013] of Tatsufumi '073, the translations of which are set forth above, there is no disclosure or suggestion whatsoever in Tatsufumi '073 of the provision of barriers for blocking the flow of ink into or out of channels. Rather, the sole purpose of the barriers 7 and the barrier ends 15 of Tatsufumi '073 is to expose at least part of the first display electrode and to prevent a short circuit among the second display electrodes. Thus, even if one of ordinary skill in the art were motivated by Humbs *et al.* '392 to seek a solution to the "ink flow" problem relating to each channel of the arrangement of Humbs *et al.* '392, that person of ordinary skill in the art would not incorporate the disclosure of Tatsufumi '073 into Humbs *et al.* '392 because Tatsufumi '073, like Humbs *et al.* '392, does not even discuss the problem of ink flow into and out of channels, and clearly does not provide a solution to that problem.

For the latter reasons, it is submitted that, even if Humbs *et al.* '392 were valid prior art, independent claim 17 and its associated dependent claims recite the invention in a manner distinguishable from the prior art so as to preclude rejection under 35 U.S.C. §102 or §103.

Finally, new independent claim 20 recites the basic composition of the OLED as set

PATENT
P56904

forth in independent claim 16, but further recites that the OLED further comprises at least one blocking member for interrupting outflow of the organic polymer layer and provided substantially at a center of two ends of each channel (as also recited in dependent claim 10), wherein the "at least one blocking member" includes at least two elements in a wedge shape, centers of the wedge being opposite to each other (as also recited in dependent claim 12). In that regard, on pages 4 and 6 of the final Office action, the Examiner set forth reasons for rejection of dependent claims 10 and 12, respectively, under 35 U.S.C. §102 based on Humbs *et al.* '392 and under 35 U.S.C. §103 based on Humbs *et al.* '392 in combination with Tatsufumi '073. As stated above, Humbs *et al.* '392 is not valid prior art.

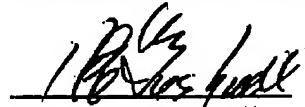
With respect to the citation of the combination of Humbs *et al.* '392 and Tatsufumi '073, there is nothing within the "four corners" of Humbs *et al.* '392, and the Examiner has not cited anything within that reference, which would motivate a person of ordinary skill in the art to seek and incorporate the disclosure of Tatsufumi '073. It is submitted that the only reason the Examiner has been able to combine the two references is that the Examiner has had the benefit of reviewing the disclosure of the present application which, of course, would not have been available to one of ordinary skill in the art at the time of the invention. For this reason, the rejection under 35 U.S.C. §103 constitutes an improper combination of references under that statute.

PATENT
P56904

In view of the above, it is submitted that the claims of this application are in condition for allowance, and early issuance thereof is solicited. Should any questions remain unresolved, the Examiner is requested to telephone Applicant's attorney.

No fee is incurred by this Amendment After Final.

Respectfully submitted,



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